P1050

Integrative System for Gene Family Gathering and Analysis in a Context of Crops' Stress Response Study

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The study of plant tolerance to stress is a crucial issue for crops improvement and stability in constrained environments. Gene family analysis is an important way to understand complex processes underlying stress response in crops. Several tools exist to study families and propose automatically clustered families or curated published families. We observed that automatic clustering, efficient for global analyses, is rarely sufficient for precise studies: i) families can be spread in several cluster, or ii) intrusive sequences are represented in clusters of interest. That is why biologists need most of the time to manually constitute their families.
In response to this need, we propose to develop an integrative system that will allow to gather sequences from different sources for a customized family. This system will integrate several tools used for family construction and analysis. Currently, the prototype allows to query in-house Chado database (banana, coffee) and to import personal data with a web interface using the Drupal CMS. Multi-species analyzes are available using Galaxy workflows manager. Eventually, this system will be linked to a stress response oriented database. This database will propose a set of controlled vocabularies, some known stress resistance factors and other indicators to ease the identification of mechanisms implied in plant stress resistance. Beside that, this system will be generic for all type of gene families, and will propose a synthetic and dynamic view to offer to researchers an easy and intuitive way to curate their families.

Handouts
Poster PAG XXII.pdf (3.1 MB)

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Meeting Information

When:
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